S530D

SERVICE MANUAL

Canon

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1. PRODUCT OUTLINE

The S530D is a photo printer incorporating the S830D functionality of direct printing from digital cameras, and the same engine as the S520, capable of high quality and high speed printing.

2. SPECIFICATIONS

2-1 Printer Specifications

Type	Desktop serial color bubble jet printer
Paper feeding method	Auto sheet feed (no manual feeding)
Resolution	2,400 dpi x 1,200 dpi (Max.)
Throughput (Target value)	Draft / Standard / High Black (New Black) 14 ppm / 12 ppm / 1.1 ppm Color (New Color) 9 ppm / 8 ppm / 0.6 ppm
Printing direction	Bidirectional, uni-directional
Print width	Max. 203.2 mm (216 mm in borderless printing)
Interface	USB FULL SPEED
ASF stacking capacity	Plain paper (75 g / m^2): Max. 10 mm (Approx. 100 sheets)
Paper weight	64 to 105 g / m^2
Detection functions	- Cover open - Distinction of print head - Printing position - Waste ink amount - Pick-up roller - Carriage position - Presence of print head - Ink out - Paper out (Paper end sensor) - Internal temperature - Paper feed roller position - Head-to-paper distance
Acoustic noise (standard mode)	Sound pressure level* : 46 dB (A) *conforms to sound pressure level ISO9296
Environmental requirements	During operation Temperature 5C to 35C (41F to 95F) Humidity 10%RH to 90%RH (no condensation) Non operation Temperature 0C to 40C(32F to 104F) Humidity 5%RH to 95%RH (no condensation)
Power supply	Input voltage / Frequency / Power consumption / Standby AC 100 to 127 V 50 / 60 Hz / Approx.36W / Approx.6W AC 220 to 240 V 50 / 60 Hz / Approx.36W / Approx.6W
External dimensions	Approx. 430 (W) x 301 (D) x 188 (H) mm
Weight	Approx. 5.7 kg, not including print head and optional device
Related standards (Printer, Adapter)	Electromagnetic radiance: VCCI, FCC, IC, C-tick, Taiwan EMC, Korea EMC, CCIB, CCEE Electrical safety: Electrical Appliance and Material Control Law (DENTORI), UL, Cul, CB Report, GS, CE Mark, FIMKO, CCIB (EMC), AS, CCEE, PSB, Electrical Safety Regulations of Korea, SASO Environmental regulations: Energy Star, Blue Angel, Environment label
Serial number location	On the carriage ribbon cable holder (visible when the front cover is open).
Remaining ink amount detection	Available (by optical detection and dot count)
Print head alignment	Available (6 types)

2-2 Photo Direct Printing Specifications

Memory card drive	Supported memory card	PCMCIA Type II compliant Compact Flash, Smart Media, Memory Stick, SD Card, Microdrive, Multimedia Card, ATA Flash Card Note: Only the adaptor for Compact Flash memory is packaged with the printer.
Storage function	Supported OS	Windows Me / 98 / 2000 / XP Mac OS 8.6 or later
	Utility	Storage utility packaged with printer
	Function	Read / Write
Card direct print function	Operation panel	LCD, 8 keys, 5 LEDs, no buzzer
	File format	JPEG (DCF, CIFF, Exif 2.1 or later, JFIF), TIFF (Exif compliant), DPOF compliant
	Supported print paper	7 types (See 2-6, “Print Media Specifications.”)
	Print quality	3 levels
	Image correction function (trimming)	APP2, Vivid, sYCC
	DPOF version	Ver. 1.00 compliant
	Function	- Index printing - Number of copies settings - Selection of images to print - Specified text (date, file no.) printing
	Resolution	Max. 2,400 x 1,200 dpi
	Date printing	Available
	Throughput	Approx. 1 minute and 50 seconds, with the following conditions and settings: - Image data from a 3 million pixel digital camera - A4 Photo Paper Pro - Non-borderless printing - 1 page per page layout - Print quality level 2 - Image correction functions disabled - Without date printing
Digital camera direct print function	Supported digital cameras	Power Shot S40 / S30, or Canon digital cameras released thereafter
	Supported print paper	Overseas: 5 types (See 2-6, “Print Media Specifications.”)
	Print layout	- Borderless 1-page per page printing - Non-borderless 1-page per page printing - Index printing
	Resolution	Max. 2,400 x 1,200 dpi

2-3 Print Head Specifications

	Print heads
Type	Replaceable ink tank type, single head for black and color (YMC) ink tanks
Print head	BK: 320 nozzles in 2 vertical lines Color: 256 nozzles in 2 vertical lines per color
Ink color	Pigment-based black, Dye-based cyan, magenta, yellow
Ink tank	BCI-3eBK, BCI-3eC, BCI-3eM, BCI-3eY
Weight (Net)	Print head, 71g: BK, 32g: C, M, Y, 11g
Supply method	As a service part (not including ink tanks) with part number QY9-0034-000

2-4 Printer / Scanner Drivers

Printer driver: Windows 98 / 98 S. E. / Millennium
Windows 2000
Windows XP
Macintosh (OS 8.6 and later)

Scanner driver: The S530D does not support a scanner driver.

2-5 Optional Device (TFT Image Viewer) Specifications

LCD	1.5 low-temperature polysilicon TFT, 11.8 million pixels - Total number of dots: 494 (horizontal) x 242 (vertical) = 119,548 dots - Number of displayed dots: 480 (horizontal) x 240 (vertical) = 115,200 dots
Effective display area	31.115 (horizontal) x 30.360 (vertical) mm
Dot pitch	0.0635 (horizontal) x 0.09225 (vertical) mm
Color arrangement	RGB delta
Backlight	LED backlight
External dimensions	90 (W) x 50 (D) x 91 (H) mm, not including projection
Weight	TBD
Input voltage	DC 27 V, to be supplied from the printer

2-6 Print Media Specifications

The following types of paper are recommended:

Type		Size	ASF stacking capacity	Borderless printing	Card direct print	Digital camera direct print
Plain paper		A4, B5, A5, LTR, LGL	10 mm or less	Yes (A4, LTR)	Yes[*1]	
High resolution paper	HR-101	A4, LTR	80 sheets or less	Yes		
Glossy paper	GP-301N	A4, LTR	1 sheet			
Pro Photo paper	PR-101	A4, LTR	1 sheet	Yes	Yes	Yes
	PR-101 L	89 x 127 mm	20 sheets	Yes		
	PR-101 2L	127 x 178 mm	20 sheets	Yes		
	PR-101 4 x 6	101.6 x 152.4 mm	20 sheets	Yes	Yes	Yes
Photo Paper Plus	PP-101	A4, LTR	1 sheet	Yes	Yes	
	PP-101 L	89 x 127 mm	20 sheets	Yes		
	PP-101 2L	127 x 178 mm	20 sheets	Yes		
	PP-101 4 x 6	101.6 x 152.4 mm	20 sheets	Yes	Yes	
Matt Photo Paper	MP-101	A4, LTR	10 sheets	Yes		
	MP-101 L	89 x 127 mm	20 sheets	Yes		
Glossy film	HG-201	A4, LTR	1 sheet			
Transparency	CF-102	A4, LTR	30 sheets or less			
Banner paper	BP-101	A4, LTR	1 sheet			
T-shirt transfer	TR-201	A4, LTR	1 sheet			
Mouse pad	MK-101	-----	1 sheet			
Glossy postcard	KH-201	148 x 100 mm	20 sheets or less	Yes		
Glossy photo postcard	FM-101	119 x 215.9 mm	20 sheets or less			
Postcard	-----	148 x 100 mm	40 sheets or less	Yes		
Postcard for inkjet printers	-----	148 x 100 mm	40 sheets or less	Yes		
Photo postcard	PH-101	148 x 100 mm	20 sheets or less	Yes		
Envelope	COM #10	241 x 106 mm	10 envelopes or less			
	DL-size	220 x 110 mm	10 envelopes or less			
	Size 4	235 x 105 mm	10 envelopes or less			
	Size 6	190 x 98 mm	10 envelopes or less			
Photo card	PC-101 L	101.6 x 190.5 mm	20 sheets or less			
	PC-101 2L	210 x 183 mm	10 sheets or less			
	PC-101 4 x 6	101.6 x 172 mm	20 sheets or less		Yes	

*1: Only A4 in Japan, both A4 and LTR overseas

2-7 Print Area

Same as S520

3. MAINTENANCE

3-1 Error Indications of the S530D

Indicator Blink Count	Error Status Code*1	Probable Cause and Faulty Parts
User-Recoverable Errors		
Orange 2 blinks	1000 Paper feed error	Paper feed section, Sheet feeder unit, Paper-end sensor, Logic board
Orange 3 blinks	1300 Paper jam error	Paper feed section, Paper-end sensor, Logic board
Orange 4 blinks	1601 No-ink error（Bk） 1611 No-ink error（Y） 1612 No-ink error（M） 1613 No-ink error（C）	Ink tank
Orange 6 blinks	1401 BJ cartridge not installed	Print head, Carriage unit
Orange 7 blinks	1402 Cartridge error 1403 1405 1485	Print head, Logic board
Orange 8 blinks	1700 Waste-ink warning	Waste ink absorber, Logic board
User-Unresolvable Errors		
Orange/green 2 toggle blinks	5100 CR error	Encorder film, carriage unit, Logic board, Carriage ribbon cable
Orange/green 4 toggle blinks	5C00 Purge sensor error	Purge unit, Logic board
Orange/green 6 toggle blinks	5400 Abnormal internal temperature error	Logic board
Orange/green 7 toggle blinks	5B00 Waste ink full error	Ink absorber, Logic board
Orange/green 8 toggle blinks	5200 Abnormal head temperature error	Print head, Logic board
Orange/green 9 toggle blinks	6800 EEPROM error	Logic board
Orange Light	--- RAM error	Logic board

3-2 Error status on the LCD

If an error occurs in the printer engine during Memory Card Direct Printing and Digital Camera Direct Printing, an error number is displayed at the Required Sheets line of the LCD. As multiple errors such as warnings, operator calls, and service calls, may simultaneously occur in the printer, priorities for error display have been established. The larger the error number is, the higher the priority.

Error No.	Error status	Probable Cause and Faulty Parts
001	Warning that printer is being used	
002	Warning that printer is not ready	
101	Ink low warning	Ink tank
102	Paper selection lever incorrect position warning	Paper selection lever
103	Ink low warning + Paper selection lever incorrect position warning	Ink tank, Paper selection lever
201	Ink out error	Ink tank
202	Waste ink warning	Ink absorber, Logic board
301	Paper out error	
302	Paper jam error	Sheet Feeder Unit
401	Cover open error	Close the front cover
402	No head installation error	Print head, Logic board
611	Communication time error with digital camera	Cable connect to the DSC, Sub board, Logic board
612	Non-supported digital camera error	Degital camera
802	Printer service call error	Show the printe error status
803	Printer errors	Logic board
809	Other errors	Logic board, I/F cable

3-3 Service Mode Operations

Though the service mode opration is the same as S520, only the method of the market area setting is defferent from the S520.Refer to the figure1.

All the logic boards available as a replacement part contain printer settings for the BJ S530. Therefore, if the logic board was re plased, be sure to set the correct printer settings.

Fig1：Functions of the S530D Service mode S530D

<table>
<tr><th>Press</th><th>Indicator</th><th>Function</th></tr>
<tr><td>0 times</td><td>Green</td><td>Power off (Even if there is no print head mounted,the carriadge will return to the home position and lock.)</td></tr>
<tr><td>1 time</td><td>Orange</td><td>Service/factory test printout(Including ink sensor check)</td></tr>
<tr><td>2 times</td><td>Green</td><td>EEPROM information printout</td></tr>
<tr><td>3 times</td><td>Orange</td><td>EEPROM initialization</td></tr>
<tr><td>4 times</td><td>Green</td><td>Clears the waste-ink counter
Waste-ink counter settings</td></tr>
<tr><td>5 times</td><td>Orange</td><td>After press the POWER button, reaching this service function. Press the RESUME button the number of times specified below to set the destination.
<table>
<tr><td></td><td>Setting</td></tr>
<tr><td>0 times</td><td></td></tr>
<tr><td>1 time</td><td>BJ S530</td></tr>
<tr><td>2 times</td><td>BJ S530</td></tr>
<tr><td>3 times</td><td></td></tr>
<tr><td>4 times</td><td>S530D</td></tr>
<tr><td>5 times</td><td>BJ 535PD</td></tr>
</table></td></tr>
<tr><td>More than 6 times</td><td>Green</td><td></td></tr>
</table>

4. Print Mode

4-1 Normal Print Mode

Paper type		Quality Setting5	Quality Setting4	Quality Setting3	Quality Setting2	Quality Setting1
Normal Paper Bk	No. of passes Bk Resolution (dpi)	1 pass PigBK 600 x 600	1 pass PigBK 600 x 600	1 pass PigBK 600 x 600	4 passes PigBK 600 x 600	
Normal Paper Color	No. of passes Bk Resolution (dpi)	1 pass(Bk) 1 pass(Color) PigBK 600 x 600	1 pass (Bk) 2 pass (Color) PigBK BK,Y:600 x 600 C,M:1200 x 600	1 pass (Bk) 4 pass (Color) PigBK BK,Y:600 x 600 C,M:1200 x 600	4 pass (Bk) 4 pass (Color) PigBK BK:600 x 600 C,M,Y:1200 x 1200	
High Resolution Paper (HR-101)	No. of passes Bk Resolution (dpi)		2 pass YMC C,M:1200 x 600	4 pass YMC C,M,Y:1200 x 1200	6 pass YMC C,M,Y:1200 x 1200	
Pro Photo Paper (PR-101/PC-101/ PH-101)	No. of passes Bk Resolution (dpi)				4 pass YMC C,M,Y:1200 x 1200	6 pass YMC C,M,Y:1200 x 1200
Glossy Paper (GP-301/FM-101/ KH-201)	No. of passes Bk Resolution (dpi)			4 pass YMC C,M,Y:1200 x 1200	6 pass YMC C,M,Y:1200 x 1200	12 pass YMC C,M,Y:1200 x 1200
Photo Paper Plus (PP-101)	No. of passes Bk Resolution (dpi)				4 pass YMC C,M,Y:1200 x 1200	6 pass YMC C,M,Y:1200 x 1200
Matt Photo Paper (MP-101)	No. of passes Bk Resolution (dpi)			4 pass YMC C,M,Y:1200 x 1200	6 pass YMC C,M,Y:1200 x 1200	
Inkjet Post Card	No. of passes Direction Bk Resolution (dpi)		2 pass Unit-Direction PigBK 600 x 600	4 pass Unit-Direction PigBK 600 x 600		
	No. of passes Bk Resolution (dpi)		2 pass YMC C,M:1200 x 600 Y:600 x 600	4 pass YMC C,M,Y:1200 x 1200		
Post Card	No. of passes Direction Bk Resolution (dpi)		2 pass Unit-Direction PigBK Bk:600 x 600	4 pass Unit-Direction PigBK BK:600 x 600		
	No. of passes Bk Resolution (dpi)		3 pass PigBK+YMC C,M:1200 x 600 Y:600 x 600	4 pass PigBK+YMC C,M,Y:1200 x 1200		
Glossy Film (HG-201)	No. of passes Bk Resolution (dpi)				4 pass YMC C,M,Y:1200 x 1200	6 pass YMC C,M,Y:1200 x 1200
T-shirt Transfer (TR-101)	No. of passes Bk Resolution (dpi)			6 pass YMC C,M,Y:1200 x 1200		
OHP Film (CF-102)	No. of passes Bk Resolution (dpi)			4 pass PigBk+YMC C,M,Y:1200 x 1200	6 pass PigBk+YMC C,M,Y:1200 x 1200	
Envelope	No. of passes Bk Resolution (dpi)		3 pass PigBk+YMC BK:600 x 600 C,M,Y:1200 x 1200	4 pass PigBk+YMC BK:600 x 600 C,M,Y:1200 x 1200		

4-2 Borderless Mode

Media Type		Quality Setting5	Quality Setting4	Quality Setting3	Quality Setting2	Quality Setting1
Plain Paper	No. of passes Bk Resolution (dpi)		2 pass YMC C,M,Y:1200 x 600			
Pro Photo Paper （PR-101/PC-101/ PH-101）	No. of passes Bk Resolution (dpi)				4 pass YMC C,M,Y:1200 x 1200	6 pass YMC C,M,Y:1200 x 1200
Glossy Paper （GP-301N/FM-101/KH-201）	No. of passes Bk Resolution (dpi)			4 pass YMC C,M,Y:1200 x 1200	6 pass YMC C,M,Y:1200 x 1200	12 pass YMC C,M,Y:1200 x 1200
Photo Paper Plus （pP-101）	No. of passes Bk Resolution (dpi)				4 pass YMC C,M,Y:1200 x 1200	6 pass YMC C,M,Y:1200 x 1200
Matt Photo Paper （MP-101）	No. of passes Bk Resolution (dpi)			4 pass YMC C,M,Y:1200 x 1200	6 pass YMC C,M,Y:1200 x 1200	
Inkjet Post Card	No. of passes Direction Bk Resolution (dpi)		2 pass YMC C,M,Y:1200 x 600	4 pass Uni-Direction PigBK BK:600 x 600 C,M,Y:1200 x 1200		
Post Card	No. of passes Direction Bk Resolution (dpi)		3 pass YMC C,M,Y:1200 x 600	4 pass Uni-Direction PigBK BK:600 x 600 C,M,Y:1200 x 1200		

4-3 Reverxible Mode

Media Type		Quality Setting5	Quality Setting4	Quality Setting3	Quality Setting2	Quality Setting1
Plain Paper	No. of passes Bk Resolution (dpi)	1 pass (Bk) 1 pass (Color) PigBK 600 x 600	1 pass (Bk) 2 pass (Color) PigBK BK,Y:600 x 600 C,M:1200 x 600	1 pass (Bk) 4 pass (Color) PigBK BK,Y:600 x 600 C,M:1200 x 600	4 pass (Bk) 4 pass (Color) PigBK BK:600 x 600 C,M,Y:1200 x 1200	

4-4 Card Direct Print

Media Type		★	★★	★★★
Plain Paper	No. of passes Bk Resolution (dpi)	1 pass (Bk) 1 pass (Color) PigBK 600 x 600	1 pass (Bk) 2 pass (Color) PigBK BK,Y:600 x 600 C,M:1200 x 600	
Pro Photo Paper （PR-101/PC-101/ PH-101）	No. of passes Bk Resolution (dpi)		4 pass YMC C,M,Y:1200 x 1200	6 pass YMC C,M,Y:1200 x 1200
Photo Paper Plus （PP-101）	No. of passes Bk Resolution (dpi)		4 pass YMC C,M,Y:1200 x 1200	6 pass YMC C,M,Y:1200 x 1200
Matt Photo Paper （MP-101）	No. of passes Bk Resolution (dpi)		4 pass YMC C,M,Y:1200 x 1200	6 pass YMC C,M,Y:1200 x 1200

4-5 Degital Camera Direct Print

Same as quality setting ** in the Card Direct Print.

5. Direct Printing Differences from S830D

Item	Differences
Order of image printing	- Photo numbers are assigned in the order in which each photo was taken by a normal digital camera. - In a folder, a higher priority is placed on a file when the file name, not counting the file extension, consists of 8 characters with the latter 4 being numeric, in compliance with the DCF (Design rule for Camera File system). Files are sorted in ascending order of those 4 numeric figures.
Date printing	- In printing of full screen without frame, the data is printed at the bottom right corner over the image, regardless of print image size. (The date printing position moves relative to the image.)
Index printing	- In Index Printing, photo numbers are located almost at the center below each index image. However, when DPOF Printing is selected, photo numbers and dates are located at the left below each index image, in the same way with the S830D.
Number of print sheets	- Up to 9999 is displayed. If the number of sheets exceeds 9999, 9999 remains displayed. - In direct printing from a memory card, the remaining number of sheets to be printed is displayed. (If the remaining number of sheets to be printed exceeds 9999, 9999 is displayed.)
Print head alignment	- In Maintenance 4 (from the operation panel), the number of patterns to be checked is 7, and the specifiable pattern numbers are from 4-01 to 4-07 accordingly, which differs from the S830D.
Digital camera direct printing	- At print instruction from a digital camera, the POWER lamp starts flashing immediately. (If the automatic print head cleaning is necessary, the cleaning starts immediately.) - During Direct Printing from a digital camera, if printing is cancelled by pressing the Reset button, all printing is cancelled, regardless of the number of copies settings. However, if “Both (Index and Standard)” is selected for Print Type, and the Reset button is pressed during Index Printing, only the Index Printing is cancelled, and Standard Printing is performed.
Storage function	- Exclusive controls when the storage function is set to the writable mode slightly differ from those of the S830D. - For several seconds after the storage function is set as a removable drive, direct access to the memory card is prohibited due to the Photo Direct function. (During the period when access is prohibited, the Print button lamp turns off once.) - The exclusive control duration is 5 seconds, while that duration of the S830D is 3 seconds. - During digital camera Direct Printing, writing is temporarily prohibited.
Trimming function	- New function, usable when optional Image Viewer is activated. - Trimming is enabled when the mode is set to “Print All (all frames printing),” “Print One (single frame printing),” or “Print Selected (specified frame printing),” and in borderless printing.
Viewer display	- During Direct Printing from a memory card, the printer icon is displayed at the lower right corner of the screen. - In selecting an image with a cursor button, the hourglass icon may appear in some instances.

6. Function of direct print

6.1 Host PC Memory Card Access Function with the Memory Card Startup Utility

6.1.1. Supported memory cards

Media types compatible with the host computer memory card access function and Memory Card Direct Printing function are as follows:

Excluding the Flash ATA Card, the PCMCIA card (Type II) adapter is necessary. (A PCMCIA card [Type II] [Compact Flash, CF2 supported] is packaged with the printer.)

- Compact Flash Card (CF1, CF2 [micro drive])
- Smart Media Card*
- Memory Stick*
- Flash ATA Card
- SD Card*
- Multimedia Card

* In the Memory Card Startup Utility, if Read/Write enabled mode is selected in “Change the drive’s read/write attribute”, the use of memory cards where the write protection is set to read-only mode is prohibited, and the operations are not assured.

Note: Cards incompatible with the PC Card ATA interface are not supported.

6.1.2. Mounting the drive

Windows:

When the S530D is connected by USB cable to a host computer with the Memory Card Startup Utility installed, and the printer is powered on via the Power button, the card slot on the S530D is mounted in My Computer as a removable drive.

Macintosh:

When the S530D is connected by USB cable to a host computer with the Memory Card Startup Utility installed, and the printer is powered on via the Power button, and then a supported memory card is inserted, the card slot on the S530D is mounted on the desktop as a removable drive.

- When the printer is connected to the computer, and is equipped with Image Viewer CV-100, it may take approx. 10 seconds for the memory card start-up utility to run when a memory card is inserted. (When the utility is set to “Auto-start an application when a card is inserted” on the Memory Card Startup Utility. This phenomenon occurs due to the timing of an exclusive process with the CV-100.)

6.2 Arrangement of image files

Photo numbers are assigned in the order in which each photo was taken by a normal digital camera.

In a folder, a higher priority is placed on a file when the file name, not counting the file extension, consists of 8 characters with the latter 4 being numeric, in compliance with the DCF (Design rule for Camera File system). Files are sorted in ascending order of those 4 numeric figures. Reproduction order on S830D and the digital camera, and displaying order in ZoomBrowser may be different in some cases.

6.3 Data access

For mounted card slot of S530D, data access to the memory card is possible by performing the usual file operations through the OS's standard file control software (such as Explorer and Finder) and general software applications. (The same operations as with standard removable drives are possible: file reading, writing, deletion, media formatting, properties, etc.)

Note: In the Memory Card Startup Utility, when "Read Only" is selected in "Change the drive's read/write attribute", it is not possible to write, delete, and format the data. When Read/Write enabled mode is selected in "Change the drive's read/write attribute", the use of memory cards where the write protection is set to the Read Only mode is prohibited.

- Memory card-supported file format: FAT16 only
  (It may be possible to read/write with memory cards formatted using FAT32, NTFS, Macintosh, etc., however they are out of specifications.)
- Change of the number of files in the operation panel
  When files have been added or deleted via the computer to the memory card, or the card has been formatted, the number of files in the operation panel is not updated until the memory card is removed and re-inserted.
- Update of the image displayed in the CV-100
  With the CV-100 installed, when files have been added, deleted or updated from the computer to the memory card, or the card has been formatted, the image displayed in the CV-100 is not updated until the memory card is removed and re-inserted.

6.4 Card slot attribute

The card slot attributes can be changed by operating the Memory Card Startup Utility on the host computer.

Card Slot Attribute	State
Read only	To protect the data on the memory card, writing to the memory card inserted in the card slot is prohibited. (Default setting)
Read/Write	Writing data to the memory card inserted in the card slot is allowed. (Use of memory cards where the write protection is set to the Read Only mode is prohibited.)

Note:

When the memory card is inserted to the printer, this attribute cannot be changed.

As the card slot attributes are stored in nonvolatile memory on the printer, attributes are kept even if the printer is powered off by disconnecting the AC plug.

6.5 Memory Card Direct Printing Function

6.5.1. Print mode

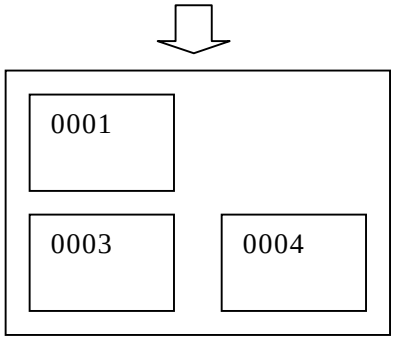
"Print Selected" mode: To produce a blank frame

Once the applicable frame is set, set the next frame, and then change the applicable frame to "----".

Ex. In a four-frame layout, to produce a blank frame in the second cell.

[Procedures on the operation panel in the Print Selected mode]

Order:	-01-	-02-	-03-	-02-	-04-
Specified photo number:	0001	0002	0003	----	0004



6.5.2. Print Quality

The following quality levels can be selected. (O: Selectable)

	★ Quality1	★★ Quality2	★★★ Quality3
A. Photo Paper Pro 4"X6"	-	○	○
B. Photo Paper Plus 4"X6"	-	○	○
C. Photo Paper Pro Perforated 4"X6"	-	○	○
D. Photo Paper Pro Letter	-	○	○
E. Photo Paper Pro A4	-	○	○
F. Plain Paper Letter	○	○	-
G. Plain Paper A4	○	○	-

Default setting is Quality 2.

6.5.3. Supported image formats

Images in the following formats can be selected when using direct printing:

DCF, CIFF, EXIF (JPEG, Tiff), EXIF-R98, JFIF

JPEG image compatibility with S530D:

Format:	Baseline DCT
Pixel sampling:	4:2:2 and 4:1:1
Samples per pixel:	1 or 3
Maximum pixel size:	Approx. 4,800(H) x 3,600(V)

TIFF image compatibility with S530D:

Format:	RGB uncompressed or YCbCr uncompressed
Pixel composition:	8 bits each (for RGB and YCbCr)

Note: Non-supported images will not be printed, and the image skipped (not printed).

- When non-supported images are detected, “-E-“ (error) is displayed in “First/-Order-“ or “Last” of the operation panel.

- Examples of non-supported files (note, some files can be printed):

TIFF (CMYK)
JPEG (CMYK)
TIFF (LZW compressed)
TIFF (JPEG compressed)
TIFF (ZIP compressed)
TIFF (over 5,000 pixels)
JPEG (over 5,000 pixels)
JPEG (Progressive)
JPEG (sampling ratio: 4:4:4)
TIFF (16 bit channel)

Note: Some files may be printed even out of the specifications.

- Certain images cannot be printed although they are within image format specifications.
  For an unknown reason, when a memory card containing partially-damaged data (detected by a software such like ScanDisk as a “Bad Block”) is inserted, and printing is attempted, there is a possibility that printing as well as some key operations may not be possible. Rectifying the Bad Block in the applicable image files through a file recovery software such like ScanDisk may correct the problem.

- Data in digital camera is processed on PhotoShop6.
  When the original image file taken by the digital camera is processed on PhotoShop6, as PhotoShop6 leaves the thumbnail image in the original image file without deleting it, the following phenomena occur:

-> Pre-processed data is displayed in the CV-100 for a moment. (In the CV-100 specifications, if the thumbnail image exists in the image file, the thumbnail image is displayed, and then full resolution image is displayed.)

-> In print mode ★(1) of index printing, as printing is conducted using the thumbnail image, processed images are not printed. (In Print Quality ★★ (2) and ★★★(3), full resolution images are printed even the thumbnail images exist, therefore processed images are printed.) In PhotoShop5.5, as the thumbnail image is deleted after processing, the above phenomenon does not appear.

6.5.4. Supported file names

DOS Ver.6.2 compliance

Up to four hierarchies of files; ex. ¥aaa¥bbb¥ccc¥img.jpg, ¥aaa¥bbb¥ccc¥img.tif

- Length limitation: Up to 60 characters of name and directory name
- Extention: 3 characters (JPEG and TIFF do not support 4 characters.)

6.6 Digital Camera Direct Printing Function

6.6.1. Print mode

In Digital Camera Direct Printing, the following print modes are selectable.

Easy print: Printing of images during reproduction of single frame or index.

Standard printing only.

DPOF print: Printing with DPOF printing settings.

Standard and index printing can be set.

6.6.2. Media type

Media types that can be printed in the Digital Camera Direct Printing are as follows (Quality Mode is all ★★ , and is the same as with the Memory Card Direct Printing):

When the language setting on the digital camera is not set to Japanese. (Default)

(Media types for overseas are all the same, however the panel display differs depending on the languages. The following is the display of US English.)

Paper setting in digital camera operation panel	S530D
Card#1	Photo PaPer Pro 4”X6”（PR-101 4”×6”）
Card#2	Glossy Photo Plus 4”X6”（SP-101 4”×6”）
Card#3	Photo PaPer Pro Perforated 4”X6”（PC-101 C、with perforation）
LTR	Photo PaPer Pro Letter（PR-101 LTR）
A4	Photo PaPer Pro A4 （PR-101 A4）

When the language setting on the digital camera is set to Japanese

When the language setting on the digital camera is not set to Japanese, media types that can be printed change.

Paper setting in digital camera operation panel	S530D
L	Professional Photo L (PR-101 L)
2L	Professional Photo 2L (PR-101 2L)
Postcard	Professional Photo postcard (PH-101)
A4	Professional Photo A4 (PR-101)
Card	Professional Photo card (PC-101 C with perforation)

6.6.3. Print layout

Print layout can be set to Border or Borderless in the digital camera operation panel.

Easy print:

- Borderless: 1 photo (2 photos in case of Card #3)
- Border: 1 photo (2 photos in case of Card #3)

DPOF print:

Standard:

- Borderless: 1 photo (2 photos in case of Card #3)
- Border: 1 photo (2 photos in case of Card #3)

Index Print:

- Same as with the Index mode of Memory Card Direct Printing.

6.6.4. Print quality

Not selectable by users

(Quality Mode is all ★★, and is the same as with the Memory Card Direct Printing)

6.6.5. Image correction function

Not selectable by users (Image correction is always off)

6.6.6. Maintenance

Maintenance operation of the S530D via the digital camera's operation panel is not possible.

Maintenance operation is possible through the operation panel of the S530D printer even when connected to the digital camera.

6.6.7. Print date

Dates can be printed by switching the date setting to "ON" on the digital camera's operation panel.

Dates cannot be printed in index printing of DPOF print mode.

6.6.8. Copies

The number of prints can be specified in both Easy Print and DPOF Print modes via the digital camera's operation panel.

6.7 Exclusive Processes

6.7.1. Exclusive processes in Memory Card Direct Printing and Digital Camera Direct Printing

As it is impossible to simultaneously process Memory Card Direct Printing and Digital Camera Direct Printing, the following actions are taken:

When the digital camera is connected via the digital camera connection cable:

Memory Card Direct Printing settings and operation are not possible except for the Maintenance mode. Setting items are not displayed in the operation panel, and the print start key is invalid.

When direct printing from the memory card:

Digital Camera Direct Printing is impossible. (Setting in the digital camera is possible.) At the start of print operations in the Digital Camera Direct Printing, an error is displayed in the digital camera.

6.7.2. Exclusive process in direct printing and printing from host computer

As it is impossible to simultaneously process the Memory Card Direct Printing, Digital Camera Direct Printing and printing from the host computer, the following actions are taken:

When printing from the host computer:

Memory Card Direct Printing and Digital Camera Direct Printing are impossible. (Setting is possible.) At the start of print operations, an error is displayed in the operation panel of the digital camera.

In Memory Card Direct Printing and Digital Camera Direct Printing:

Printing from the host computer is impossible. (Print setting on the host computer is possible.) At the start of print operations from the host computer, an error is displayed in the host computer.

6.7.3. Exclusive processes in host computer memory card access and Memory Card Direct Printing

Writing of data from the host computer to the memory card, while reading of image data from the memory card for direct printing is conducted as follows in order to avoid overwriting the image being printed in Memory Card Direct Printing, via the host computer.

When direct printing from the memory card:

Writing data from the host computer to the memory card is not possible. (Reading of data is possible.)

An error is displayed in the host computer at the start of data writing operations.

When writing data from the host computer to the memory card*:

Direct printing from the memory card is not possible. Even if the print start key is pressed, printing will not start.

*From the time the host computer sends writing commands until a fixed period of time after the last writing command.

Note: In order to perform direct printing after writing data from the computer is completed, the memory card must be removed, and reinserted.

6.8 Operations in the Operation Panel

6.8.1. Print button

When this button is pressed, Memory Card Direct Printing starts. An LED installed inside the button blinks during printing. The button is also used to select setting values while in maintenance mode.

6.8.2. Cancel button

When this button is pressed during Memory Card Direct Printing, printing stops. The button is also used to reset the Memory Card Direct Printing settings to the default of each mode. (The button is invalid when pressed during printing from the host computer or Digital Camera Direct Printing.)

6.8.3. Cursor buttons

Pressing the vertical cursor buttons moves the cursor at both ends of the LCD.

Pressing the horizontal cursor buttons alters the setting values of each item.

For the photo number and the number of copies, the left button decreases the number, and the right button increases the number.

6.9 Mode Displays in Operation Panel

6.9.1. No card insertion

Nothing is displayed in the LCD when the printer is powered on, and a valid memory card is not inserted, or a digital camera is not connected.

Possible key operation under the mode:

Power button:	Powers off the printer.
Resume button:	Resets the printer. (same as with the S520)
Maintenance button:	Enters the maintenance mode.
Other buttons:	Invalid.

6.9.2. Index mode

The Print Index LED is turned when the Index mode is selected to perform index printing of photographs in the memory card. The photo numbers for the starting (first) and finishing (last) images are selectable.

Layout and Optimize Image cannot be selected.

This mode is selected by default if the memory card has no DPOF settings, and no optional CV-100 is connected.

6.9.3. All frame mode

The Print All LED is turned on when the All Frame mode is selected to print all photographs from the first to the last photo numbers.

The starting (first) and finishing (last) photo numbers to be printed can be set.

6.9.4. Single frame mode

The Print One LED is turned on when the single frame mode is selected to print a specified single photo number and the specified number of copies.

This mode is selected by default if the memory card has no DPOF settings, and the optional CV-100 is connected.

6.9.5. Specified frame mode

The Print Selected LED is turned on when the specified frame mode is selected to perform printing by specifying the printing order and applicable photo numbers.

6.9.6. DPOF mode

The DPOF LED is turned on when the DPOF mode is selected to perform printing according to the DPOF-specified information on the memory card.

It is impossible to specify the photo numbers and date printing through the operation panel, as they are dependent on the DPOF settings.

This mode is selected by default if the memory card has DPOF settings.

The mode cannot be selected if the memory card has no DPOF settings. (The mode is skipped even if the mode button is pressed.)

6.9.7. Digital camera direct mode

The camera mark appears in the LCD when the digital camera is connected. (Even with the memory card inserted, all displays other than the camera mark disappear.)

When a supported digital camera is connected with the digital camera connection cable, the printer enters this mode by priority. (However, if Memory Card Direct Printing is being performed, the printer will not enter this mode until printing has completed. In the maintenance mode, the printer does not enter the digital camera direct mode until the printer exits the maintenance mode via the maintenance button.)

In the digital camera direct mode, the printer will not enter other print modes until the digital camera is disconnected from the printer, even if the Mode button is pressed.

When the maintenance button is pressed, the printer will enter the maintenance mode if printing is not being performed.

If an error occurs, the error is displayed in the Required Sheets line of the LCD.

In the digital camera direct mode, when print start is designated from the digital camera, Digital Camera Direct Printing starts.

Possible key operation under the mode:

Power button:	Powers off the printer.
Resume button:	Resets the printer (same as with the S520).
Maintenance button:	Enters maintenance mode unless Digital Camera Direct Printing is being performed.
Other buttons:	Invalid

6.9.8. Maintenance mode

The maintenance icon appears in the Required Sheets line of the LCD when the maintenance mode is selected to maintain the S530D and optional CV-100.

This mode is selected by pressing the maintenance button, except during Memory Card Direct Printing and Digital Camera Direct Printing.

Possible key operation under the mode:

Power button:	Powers off the printer.
Resume button:	Resets the printer (same as with the S520).
Mode button:	invalid.
Print button:	Specifies and implements the maintenance selection items.
Resume/Cancel button:	Resets the maintenance items to default.
Maintenance button:	Exits the maintenance mode.

6.9.9. Error display

Error number is displayed in the Required Sheets line of the LCD when errors occur in the S530D.

The display clears when the errors are recovered.

Note: Details of error displays are described in the following section.

Possible key operation under the mode:

Power button:	Powers off the printer.
Resume button:	Resets the printer (same as with the S520).
Mode button:	Invalid.
Print button:	Error-dependent.
Resume/Cancel button:	Error-dependent.
Maintenance button:	Invalid.

6.10 Maintenance Display and Operation

6.10.1. Maintenance list

Maintenance No.	Content of Maintenance
1	Nozzle check pattern printing
2	Head cleaning
3	Head refreshing
4	Head alignment
5	Optional CV-100 brightness adjustment* (selectable only when the CV-100 is connected)
6	Optional CV-100 contrast adjustment* (selectable only when the CV-100 is connected)

*Available when a memory card containing data is inserted and while there is no active connection to a powered on digital camera.

6.10.2. Entering the maintenance mode

Pressing the Maintenance button on the operation panel moves the printer to the maintenance mode.

The printer will not enter the mode while Memory Card Direct Printing and Digital Camera Direct Printing, or when an error is displayed in the operation panel.

6.10.3. Implementing maintenance

Pressing the Print button in the maintenance mode executes the selected maintenance operation.

When the maintenance number is 0, the operation is invalid.

When the printer starts the maintenance, the step number showing the processing level of each maintenance is displayed to the right of the maintenance number such as ‘1-01’.

During maintenance implementation, the left and right cursor keys cannot be switched to other maintenance modes.

During each step implementation, if an error occurs in the printer engine, the operation panel enters the error display mode.

6.11 Card Slot-related Operation and Display

6.11.1. Removing the memory card

Users can force the ejection of memory cards inserted in the card slot, by pressing the Eject button next to the slot. However, in order to protect the data on the memory card, remove the card using any of the following timings/methods:

- While the Access lamp is not lit, press the Eject button to remove the memory card.
- If the memory card is removed while the Access lamp is blinking or on, the data on the card is not assured.
- When the printer is not connected to a host computer, power off the printer with the Power button and after the Access lamp is unlight, remove the memory card.
- Remove the memory card together with the adapter, not the memory card only.
- When the printer is connected to the host computer, from the host computer, select “Eject disk” to unlit the Access lamp, and then remove the memory card.

(Turning off the printer makes it possible to turn off the Access lamp, however in this case, a warning message of incorrect disk removal may be displayed in the connected host computer.)

When a Windows PC is used and the drive of the memory card is displayed in Explorer, close the window prior to the removal of the memory card.

(If the window is not closed prior to the memory card removal, the following phenomenon will appear in the host computer.)

WindowsMe/98: A blue background screen appears. This can be recovered by following the instructions in the display.

Windows2000/XP: A warning is displayed, and the ejection operation cannot be executed.

6.11.2. Power supply/cut to the memory card

1) Power supply to the memory card

When any of the following events occurs, the memory card detection process starts, and if an accessible memory card is recognized, power supply to the memory card starts. (At the time that the Access lamp is turned on.)

a. When a memory card is inserted into the card slot while the printer is on.

b. When the printer is powered on while a memory card is in the card slot.

c. When the USB bus is reset while the printer is on with a memory card in the card slot.

(When the host computer is already on, and is connected to the printer, or when the host computer, connected by a USB cable to the printer, is restarted.)

2) Power cut to the memory card

When any of the following events occur, power supply to the memory card is cut. (At the time that the Access lamp is turned off.)

a. When the printer is turned off by pressing the Power button.

However, power is supplied in the following instances even if the printer is not on,

- From the time that a memory card removable command is received from the host computer until a removal permission command is received, or the USB cable is disconnected.
- From the time that a writing command is received from the host computer to the memory card until writing is completed.

b. When the memory card is removed from the card slot by pressing the Eject Button.

c. When the following “Memory card removal command” is implemented on the connected host computer.

6.11.3. Memory card removal command from the host computer

When the following operation is performed on the host computer, it is detected that the memory card removal command has been implemented, and power supply to the memory card is cut.

Windows: Highlight the drive icon and right-click the mouse button to select “Remove”, or select “Eject the memory card” from the Memory Card Startup Utility.

Macintosh: Discard the drive icon to the trash, select “Removal” from the “Special” menu, or select “Eject the memory card” from the Memory Card Startup Utility.

6.11.4. Writing to the memory card from the host computer

When writing (addition, deleting or updating) is implemented, the print mode settings are returned to default.

6.12 DPOF Settings in the Memory Card Direct Printing Function

6.12.1. Supported DPOF functions

DPOF Ver. 1.0 is supported.

The following essential functions of the DPOF printer are supported.

- Standard printing
- No. of copies to be printed (1 page)
- Image format (CIFF, EXIF (JPEG), JFIF)
- Designation of images to be printed (relative path name)

The following optional functions to the DPOF printer are supported.

- Index printing
- No. of copies to be printed (2 pages or more)
- Image format (EXIF (TIFF))
- Printing of designated characters (dates, photo numbers)

If both dates and photo numbers are selected, one of the two will be printed.

Note: The CMT value indicating the comment and title of the image is not supported.

The following optional functions to the DPOF printer are not supported.

- Image format (FlashPix)
- Designation of paper types
- Trimming
- Rotation of images

6.12.2. Print specifications in DPOF print mode of Memory Card Direct Printing

Photo number designation:	Only photos that have been designated in the DPOF file are to be printed, and designation is impossible from the operation panel.
Paper type:	The paper type can be selected from the operation panel.
Layout:	Images designated for Standard printing in the DPOF file are printed in the designated order in the layout designated through the operation panel.
No. of copies to be printed:	The number cannot be designated from the operation panel, and the number of copies that has been designated in the DPOF file is printed.
Image correction:	Automatic image correction can be designated from the operation panel.
Quality:	The print quality can be designated form the operation panel.
Date print:	Date print cannot be designated from the operation panel in the DPOF mode, and printing is implemented by following the DPOF settings of the file. Date formats are dependent on the digital camera. (Note: When direct printing from a digital camera, even if specified in the DPOF file, date printing will not be performed.)

6.13 Print Layout (Details)

6.13.1. Selectable layout in Memory Card Direct Printing (O: Applicable)

Media Type	All Frame / Single Frame / Specified Frame / DPOF Modes						Index mode
	Borderless	1Photo	2Photos	4Photos	8Photos	16Photos	-
A. Photo Paper Pro 4"X6"	O	O	O	O	O	O	O (24 photos)
B. Photo Paper Plus 4"X6"	-	O*	-	-	-	-	O (24 photos)
C. Photo Paper Pro Perforated 4"X6"	-	O	-	-	-	-	O (24 photos)
D. Photo Paper Pro Letter	O	O	O	O	O	O	O (80 photos)
E. Photo Paper Pro A4	O	O	O	O	O	O	O (80 photos)
F. Plain Paper Letter	O	O	O	O	O	O	O (80 photos)
G. Plain Paper A4	O	O	O	O	O	O	O (80 photos)

*Cut the paper along perforation after printing to make borderless photo.

6.13.2. Selectable layout in Digital Camera Direct Printing

When the language setting on the digital camera is not set to Japanese.

(Media types for overseas are all the same, however the panel display differs depending on the languages. The following is the display of US English.)

Media Type	Standard		Index
	Borderless	Border	—
Card#1(Photo PaPer Pro 4"X6")	O (1 photo)	O (1 photo)	O (24 photos)
Card#2(Glossy Photo Cards Perforated 4"X6")	O (1 photo)	O (1 photo)	O (24 photos)
Card#3(Photo PaPer Pro Perforated 4"X6")	O (1 photo)	O (1 photo)	O (24 photos)
LTR (Photo PaPer Pro Letter)	O (1 photo)	O (1 photo)	O (80 photos)
A4 (Photo PaPer Pro A4)	O (1 photo)	O (1 photo)	O (80 photos)

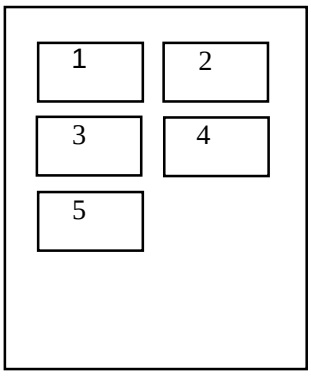
When the language setting on the digital camera is set to Japanese

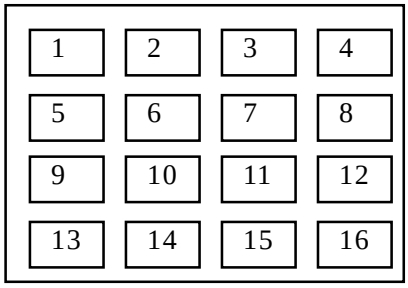
Media Type	Standard		Index
	Borderless	Border	
L (Professional Photo L)	O (1 photo)	O (1 photo)	O (15 photos)
2L (Professional Photo 2L)	O (1 photo)	O (1 photo)	O (35 photos)
Postcard (Professional Photo postcard)	O (1 photo)	O (1 photo)	O (24 photos)
Card (Professional Photo card)	O (2 photos)	O (2 photos)	O (12 photos)
A4 (Professional Photo A4)	O (1 photo)	O (1 photo)	O (80 photos)

6.13.3. Layout in Memory Card Direct Printing

Layout of multiple images is arranged as shown below.

- Images are arranged horizontally, from left to right, top to bottom.





- In All Frame printing and index printing modes, when the Start photo number is larger than the Last photo number, printing is performed from the Last photo in reverse order.
- When the number of photos designated requires less space than the layout provides, nothing is printed in the remaining spaces.

6.13.4. Layout and trimming

Trimming can be automatically performed. (Manual trimming is not possible.)

Memory Card Direct Printing (X: No trimming, O: Trimming)

Mode	Index	All Frame / Single Frame / Specified Frame / DPOF					
Layout	-	Borderless	1 photo	2 photos	4 photos	8 photos	16 photos
Professional Photo Paper A4 Plain Paper A4 Photo Paper Pro Letter Plain Paper Letter Photo Paper Pro 4”X6”	X	O	X	X	X	X	X
Photo PaPer Pro Perforated 4”X6” Glossy Photo Cards Perforated 4”X6”	X		O				

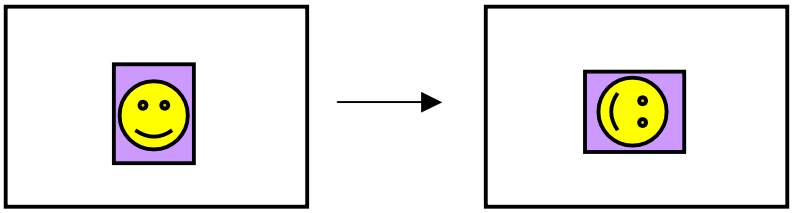
Digital Camera Direct Printing: (X: No trimming, O: Trimming)

Print Designation	Index	Standard	
Border/Borderless	-	Borderless	Border
Professional Photo Paper A4 Professional Photo Paper Letter Photo Paper Pro 4”X6” Photo Paper Pro Perforated 4”X6” Glossy Photo Cards Perforated 4”X6”	X	O	X

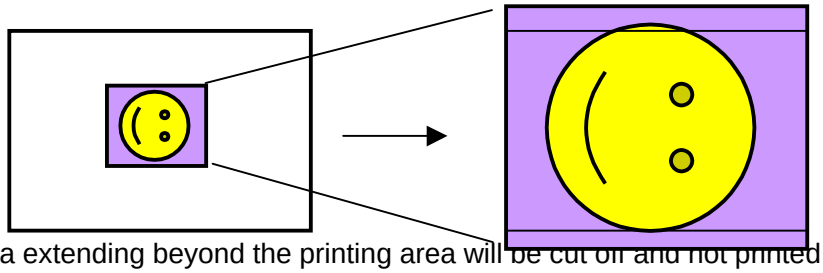
6.13.5. Layout and image size

Processing in borderless printing

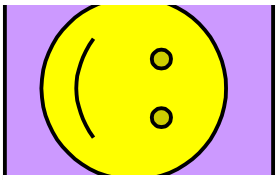
1) Rotate the image data by 90 degrees (if necessary) to align the long edges of the image with those of the paper (or perforated lines).



2) Enlarge (or reduce) the image data in the same magnification of portrait and landscape so as to align either the long or short edges of the image with those of the paper (or perforated lines), so that blank space in the paper (inside the perforated line) is completely eliminated.



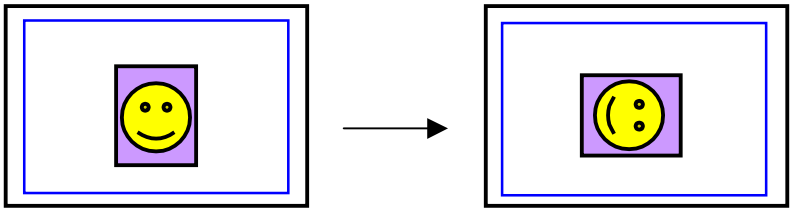
3) Any image data extending beyond the printing area will be cut off and not printed. (The discarded image data will be equally divided between top and bottom, or left and right.)



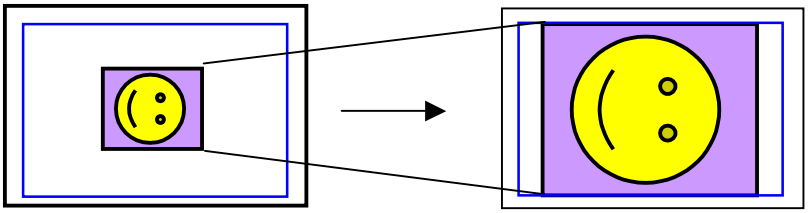
Note: As printing of the image is performed to an area 5 mm larger than that of the paper size, the perimeter of the image is further trimmed by a few millimeters.

6.13.6. Processing in printing in print area without image trimming

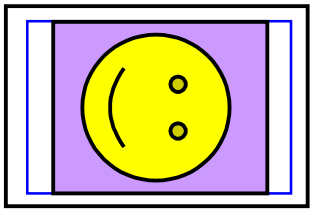
1) Rotate the image data by 90 degrees (if necessary) to align the long edge of the image data with those of the paper (or perforated lines).



2) Enlarge (or reduce) the image data in the same magnification of portrait and landscape so as to align either the long or short edges of the image with those of the print area (blue line), so that no image data is discarded.



3) The area without any image data will be blank. (Empty areas will be equally divided between left and right, or top and bottom.)



6.14 Date print specifications

6.14.1. Date print in Memory Card Direct Printing

1) Settings and data format

Printing in DPOF (Index and Standard) mode:

When date print is set to ON in the DPOF settings, the date is printed using the character strings in the DPOF settings.

Printing in other modes:

When date print in the operation panel is set to ON, the date information in the file is printed in the following order: Year (four digits). Month (two digits). and Date (two digits) (with date elements separated by periods)

Ex. 1999.09.01

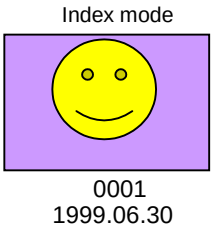
2) Print location, color and size

Printing in Index mode:

Location: Below the image (under the photo number)

Color: Black

Size: Fixed size

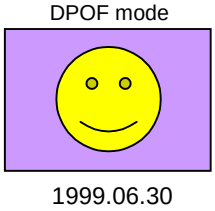


Printing in DPOF (Index) mode:

Location: Below the image

Color: Black

Size: Fixed size

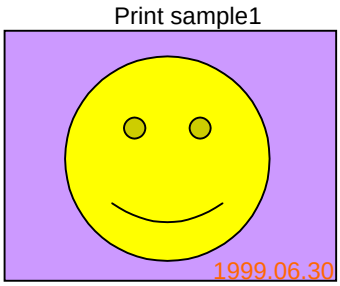


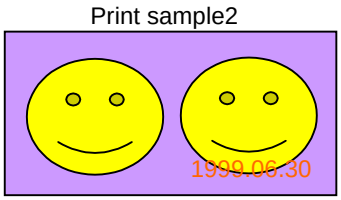
Printing in DPOF (Standard) and other modes:

Location: Lower right, in the image (In the images where the ratio is other than 4:3, the date may be printed outside or partially overlapping the image.)

Color: Orange

Size: According to the layout.





6.14.2. Date print in Digital Camera Direct Printing

1) Settings and data format

In the digital camera, when date print is set to ON, the date will be printed using the character strings sent by the digital camera. However, in the DPOF mode index printing using the digital camera, the date will not be printed, regardless of the settings.

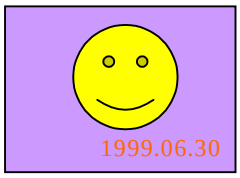
2) Print location, color and size

Printing in easy print and DPOF (Standard) modes:

Location: Lower right, in the image (In images with aspect ratio other than 4:3, the date may be printed outside or partially overlapping the image.)

Color: Orange

Size: According to the layout.



Printing in DPOF (Index) mode:

Date will not be printed, even when set in the DPOF settings of the digital camera.

6.15 Photo number printing in Memory Card Direct Printing

6.15.1. Photo number printing in Memory Card Direct Printing

1) Data format

Printing in Index mode:

Photo number (4-digit number displayed on the operation panel) is printed. (Printed without exception)

Printing in DPOF (Index and Standard) mode:

When the file number print is set to ON in the DPOF settings, the file number character string set in the DPOF settings is printed, as is. (However, when date print is selected, the file number will not be printed.)

Printing in other modes:

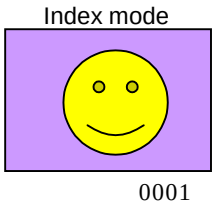
The photo number will not be printed.

Printing in Index mode:

Location: Below the image (Above the date)

Color: Black

Size: Fixed size

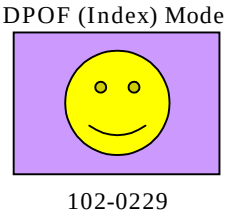


Printing in DPOF (Index) mode:

Location: Below the image

Color: Black

Size: Fixed size

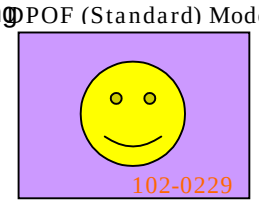


Printing in DPOF (Standard) mode:

Location: Lower right, in the image (outside depending on the shape of the image)

Color: Orange

Size: According to the image size.



Printing in other modes:

The photo number will not be printed.

6.15.2. Photo number printing in digital camera direct printing

1) Data format

The photo number will not be printed, even when set in the DPOF settings.

2) Print location, color and size

The photo number will not be printed.

6.16 Direct Printing Functions with Digital Camera Connected to the S530D

6.16.1. Ratio of trimming and printing

Aspect ratio of trimming and printing frame changes according to the media type. If borderless print is

selected or not, frame ratio is the same.

(If borderless print is selected, aspect ratio is the same of the media size.)

Frame ratio of trimming and printing

Media Type	Image size in borderless print [mm×mm]	Ratio of trimming frame and print selection frame [long : short]
LTR	279.4 x 215.9	1.29 : 1
A4	297 x 210	1.41 : 1
Card	152.4 x 101.6(4'X 6')	1.50 : 1
Card Size	86 x 54	1.59 : 1
L	127 x 89	1.43 : 1
2L	178 x 127	1.40 : 1
Post Card	148 x 100	1.48 : 1

6.16.2. Error display

When a printer error occurs, the following errors are displayed in both the S530's operation panel and the digital camera's screen. However, some errors are only displayed in either the S530D or the digital camera. (Refer to Table 2 below.)

The error codes are displayed on the operation panel of the S530D, while the error messages are displayed on the screen of the digital camera.

In the digital camera's screen, the "Continue" or "Cancel" button is displayed depending on the error. (Refer to Table 1 below.)

Table 1: Printer error (O: Applicable, -: Not applicable)

Error Name	Code	Priority	Customer Support	Error Recovering Method on DSC		
				Automatic Recovery	"Continue" on DSC*	"Cancel" on DSC*
Printer is being used	1	9	1. Wait until printing starts. 2. Press "Cancel" on DSC to cancel printing.	O	-	O
Printer is not ready	2	9	1. Wait until printing starts. 2. Press "Cancel" on DSC to cancel printing.	O	-	O
Ink low	101	8	1. Replace ink tanks, printing will start. 2. Press "Continue" on DSC to force printing. 3. Press "Cancel" on DSC to cancel printing.	O (Replace Ink)	O	O
Incorrect position of paper selection lever	102	8	1. Rectify lever location, and perform printing. 2. Press "Continue" on DSC to force printing. 3. Press "Cancel" on DSC to cancel printing.	O (Adjust Lever)	O	O
Ink low and incorrect position of paper selection lever	103	8	1. Rectify lever position. Ink low warning may appear. 2. Replace ink tanks. Incorrect lever position error may appear. 3. Press "Continue" on DSC to force printing. 4. Press "Cancel" on DSC to cancel printing.	O (Replace Ink, Adjust Lever)	O	O
Ink out	201	7	1. Replace ink tanks, printing will start. 2. Press "Resume" on printer to force printing. 3. Press "Cancel" on DSC to cancel printing.	O (Replace Ink, Adjust Lever)	-	O
Waste ink	202	6	1. Press "Resume" on printer to force printing 2. Press "Cancel" on DSC to cancel printing.	O (Resume Key)	-	O
Paper out	301	5	1. Load paper, and press "Resume" on printer to start printing. 2. Press "Cancel" on DSC to cancel printing.	O (Resume Key)	-	O
Paper jam	302	5	1. Load paper, and press "Resume" on printer to start printing. 2. Press "Cancel" on DSC to cancel printing.	O (Resume Key)	-	O
Cover open	401	4	1. Close cover, printing will start. 2. Press "Cancel" on DSC to cancel printing.	O (Close Cover)	-	O
No head installed	402	3	1. Install head, printing will start. 2. Press "Cancel" on DSC to cancel printing.	O (Install Head	-	O
Non-supported paper selection	601	2	1. Press "Cancel" on DSC to cancel printing.	-	-	O
Transmission time out	611	2	1. Disconnect the cable.	-	-	O
Non-supported device	612	2	1. Disconnect the cable.	-	-	-
Printer service call	802	1	1. Press "Cancel" on DSC to cancel printing.	-	-	O
Other printer errors	803	1	1. Press "Cancel" on DSC to cancel printing.	-	-	O
Others	809	1	1. Press "Cancel" on DSC to cancel printing.	-	-	O

*DSC: Digital camera

6.16.1. Printing from Computer during Digital Camera Direct Printing

In Digital Camera Direct Printing, as one page is equal to one job, printing from the computer may occur in the interval between direct print jobs.

6.17 OPTION IMAGE VIEWER CV-100

6.17.1. Function

The CV-100 has a function to display the JPEG images stored on the memory card. Images selected in the operation panel are displayed in the CV-100.

6.17.2. CV-100 Display On

The CV-100 display is switched on in the following conditions:

1. The S820D is powered on while the CV-100 is attached.
2. Memory card containing the JPEG images is inserted into the card slot.

6.17.3. CV-100 Display Off

The CV-100 display is switched off in the following conditions:

- The S530D is powered off.
- A digital camera is connected.
- The memory card is removed from the card slot.
- The CV-100 is in the sleep mode.

6.17.4. Sleep Mode

When a memory card is inserted and an image is displayed on the CV-100, after 5 minutes have lapsed since the last key operation in the operation panel, the CV-100 enters Sleep mode. However, during printing, or when 5 minutes have lapsed in maintenance mode with no key operations, the CV-100 will not enter Sleep mode. Also, while in Sleep mode, if the memory card is ejected and then inserted, any key operation will recover from Sleep mode.

6.18 Operation Panel and CV-100 Display

The relation between the operation panel display and CV-100 display is shown below. (For Display 1, 2 and 3, refer to 6.19 CV-100 Display.)

6.18.1. Index mode

Cursor Position in Operation Panel	Image Display on Viewer
Start / - Order -	Display 1
Last	Display 1
Media Type	Display 3
Layout	Display 3
Quality	Most recently displayed image
Print Date	Most recently displayed image
Optimize Image	Most recently displayed image
Requested Sheets	Most recently displayed image

6.18.2. All frame mode

Cursor Position in Operation Panel	Image Display on Viewer
Start / - Order -	Display 1
Last	Display 1
Media Type	Display 2
Layout	Display 2
Quality	Most recently displayed image
Print Date	Most recently displayed image
Optimize Image	Most recently displayed image
Requested Sheets	Most recently displayed image

6.18.3. Single frame mode

Cursor Position in Operation Panel	Image Display on Viewer
Start / - Order -	Display 1
Last	Most recently displayed image
Media Type	Display 2
Layout	Display 2
Quality	Most recently displayed image
Print Date	Most recently displayed image
Optimize Image	Most recently displayed image
Requested Sheets	Most recently displayed image

6.18.4. Specified frame mode

When no image is selected, no image is displayed.

Cursor Position in Operation Panel	Image Display on Viewer
Start / - Order -	Most recently displayed image
Last	Display 1
Media Type	Display 2
Layout	Display 2
Quality	Most recently displayed image
Print Date	Most recently displayed image
Optimize Image	Most recently displayed image
Requested Sheets	Most recently displayed image

6.18.5. DPOF mode

When the memory card contains a DPOF-specified JPEG image, the specified JPEG image is displayed. If the DPOF designation is the Standard, Display 2 is displayed in the CV-100, if the designation is the Index, Display 3 is displayed, and if both Standard and Index are designated, Display 2 is displayed with priority given to Standard.

Cursor Position in Operation Panel	Image Display on Viewer
Start / - Order -	Not selectable
Last	Not selectable
Media Type	Display 2 / 3
Layout	Display 2 / 3
Quality	Most recently displayed image
Print Date	Most recently displayed image
Optimize Image	Most recently displayed image

6.19 CV-100 Display

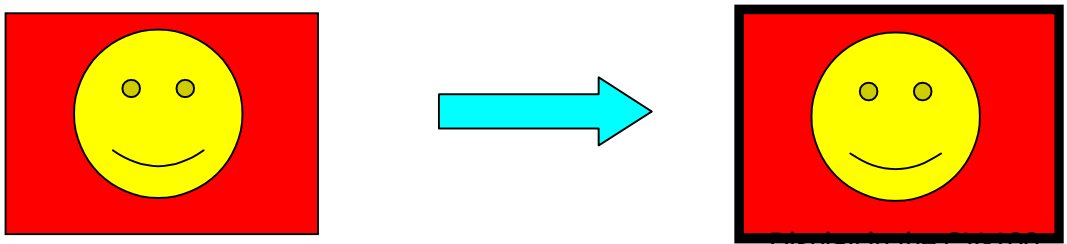
6.19.1. Display 1

Images, whose numbers are selected in Start and Last on the operation panel, are displayed in the CV-100 in the JPEG format without being trimmed.

When thumbnail image is available in the JPEG images, the thumbnails, and then the full resolution JPEG images are displayed.

JPEG image: 4:3;

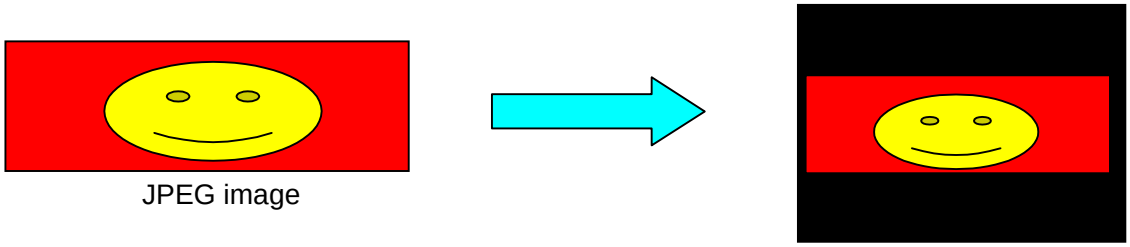
As the aspect ratios of JPEG image and CV-100 are identical, the image is displayed in the full screen of CV-100.



JPEG image

JPEG image: Not 4:3 (horizontal edge is longer)

As the aspect ratios of JPEG image and CV-100 are not identical, the JPEG image is reduced so that the long side of the JPEG image matches that of the CV-100, and the display in the CV-100 is centered.

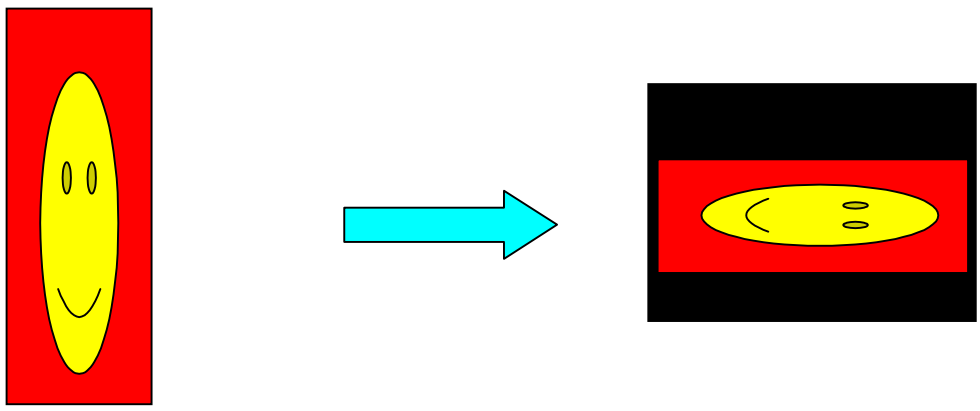


JPEG image

Display in the CV-100

JPEG image: Not 4:3 (vertical edge is longer)

As the aspect ratios of JPEG image and CV-100 are not identical, the JPEG image is rotated by 90 degrees, and reduced so that the long side of the JPEG image matches that of the CV-100, and the display in the CV-100 is centered.



JPEG image

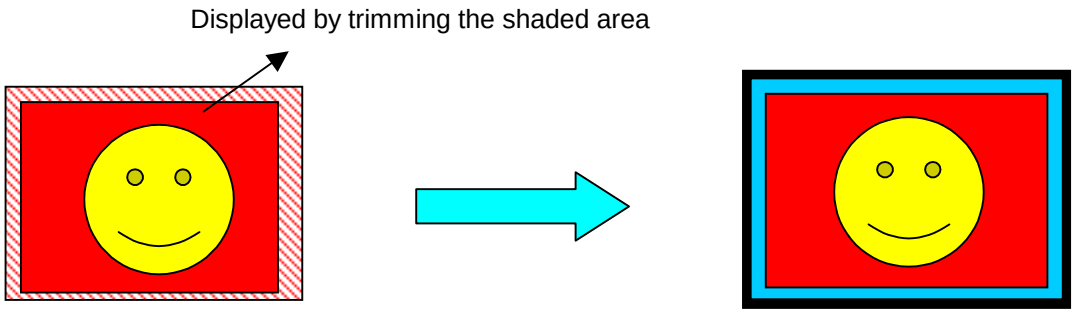
Display in the CV-100

6.19.2. Display 2

Images selected in Media Type and Layout on the operation panel are displayed in the CV-100. Examples of A4-size print media are shown below.

When Media Type is A4, and Layout is borderless:

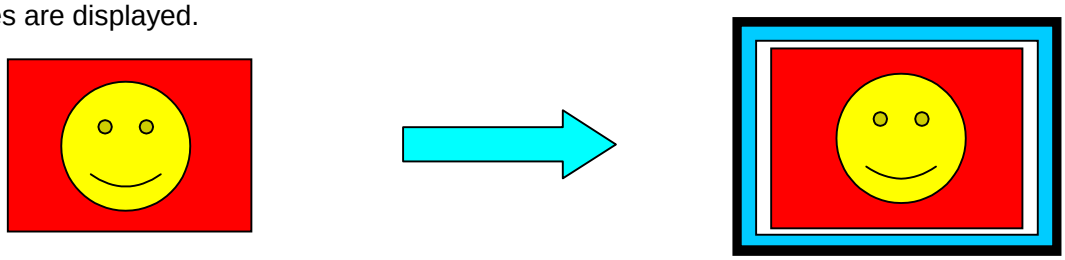
When borderless printing is selected in the operation panel, the edges of image are trimmed when printed, therefore the trimmed image is displayed in the CV-100. When thumbnail image is available in the JPEG images, the thumbnails, and then the full resolution JPEG images are displayed.



JPEG image Display in the CV-100

When Media Type is A4, and Layout is one frame:

When thumbnail image is available in the JPEG images, the thumbnails, and then the full resolution JPEG images are displayed.

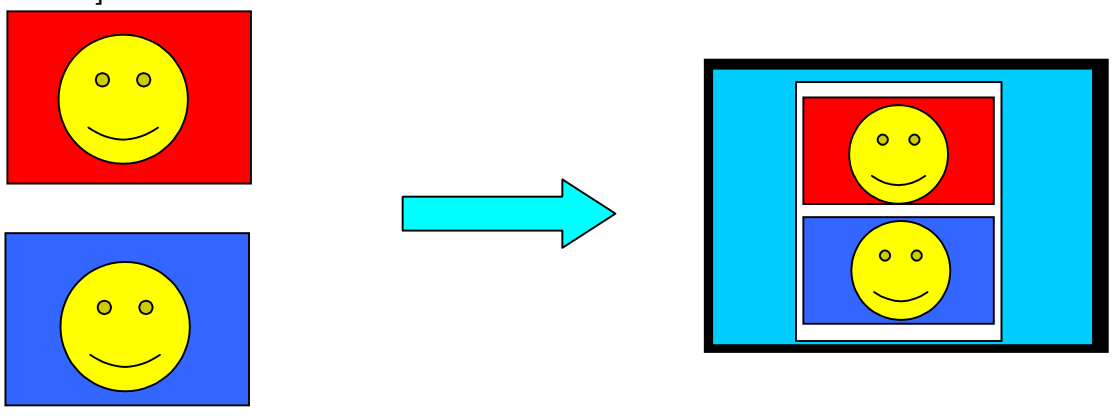


JPEG image Display in the CV-100

When Media Type is A4, and Layout is 2 frames, 4 frames, 8 frames, or 16 frames:

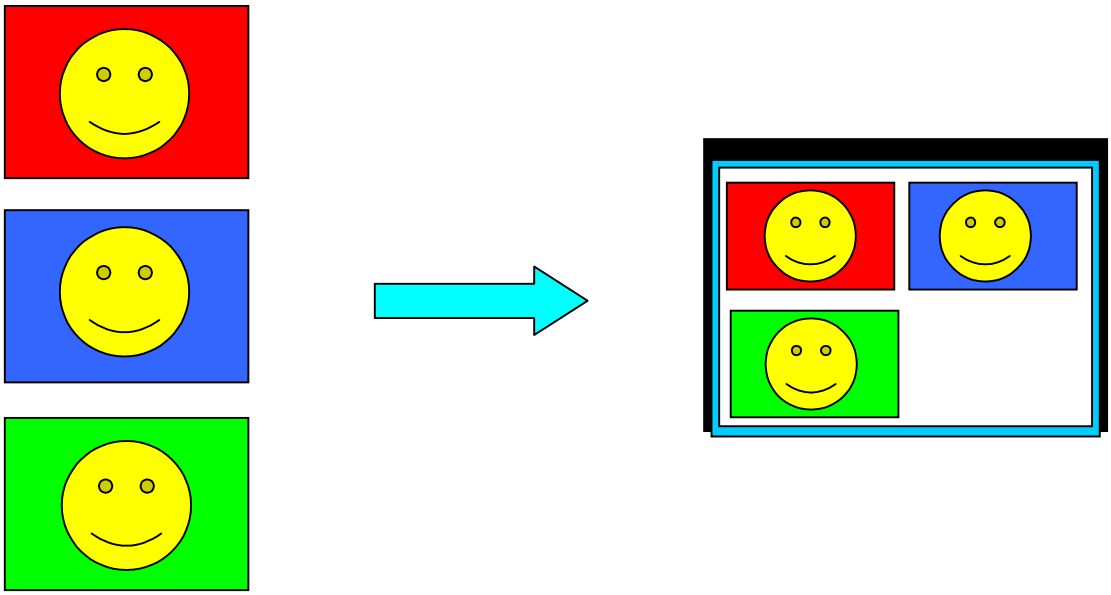
When thumbnail image is available in the JPEG images, the thumbnails are only displayed, and when thumbnail image is not available in the JPEG images, the full resolution JPEG images are only displayed.

[2 frames]



JPEG image Display in the CV-100

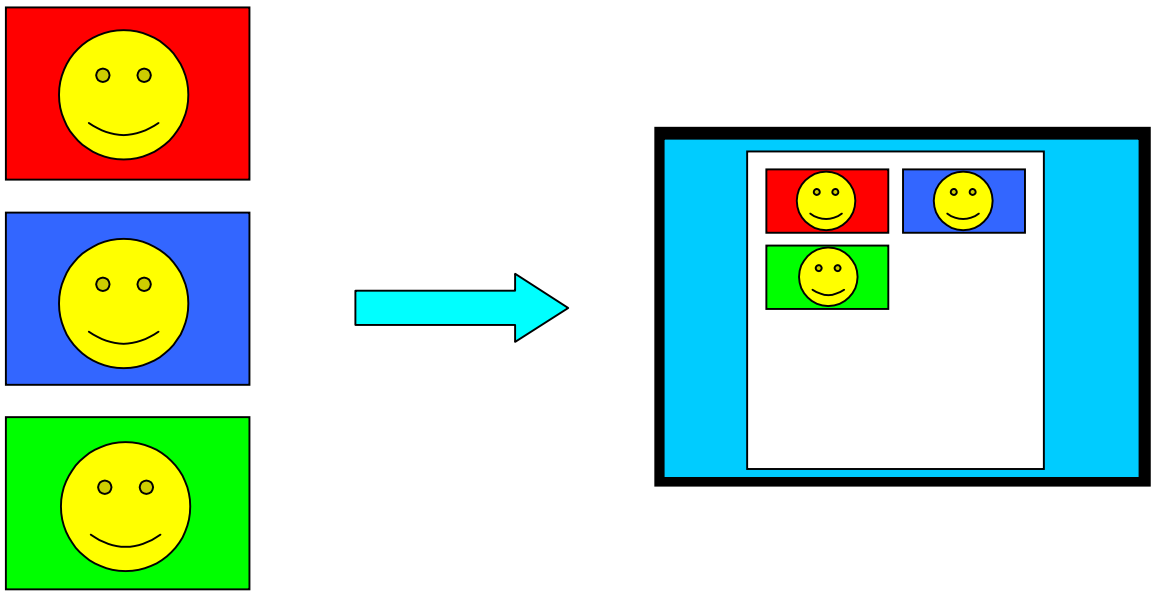
[4 frames]



JPEG image

Display in the CV-100

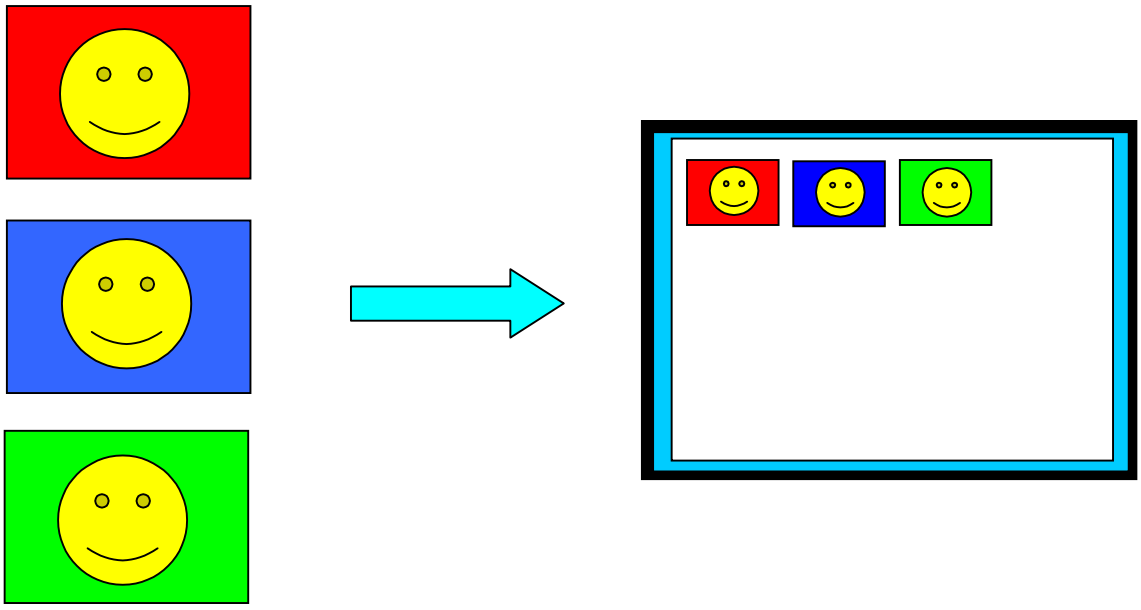
[8 frames]



JPEG image

Display in the CV-100

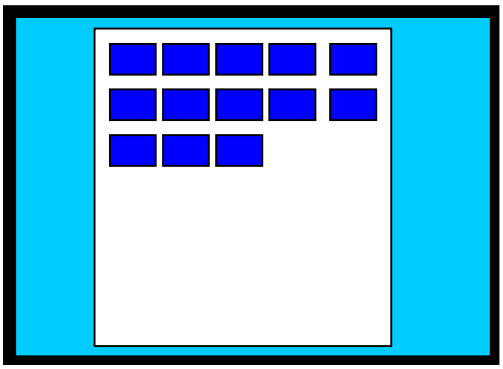
[16 frames]



JPEG image　　Display in the CV-100

6.19.3. Display 3

As many blue icons as the JPEG images stored on the memory card are displayed in the CV-100. The blue icons are displayed according to the selected media type arrangement.



Display in the CV-100

6.19.4. Display in printing

During Direct Printing from a memory card, the printer icon is displayed at the lower right corner of the screen.

The printer icon is diappeared when print is canceled or printing is finished.

6.20 Maintenance

Brightness and contrast of the CV-100 display can be adjusted from Maintenance mode in the operation panel. The level can be selected at a range between –7 and +7 for both the brightness and contrast, and the selected values are stored in the EEPROM installed in the CV-100. When the printer is started up, the brightness and contrast will become to be as stored in the EEPROM.

Note: When adjusting those values, a memory card containing JPEG images must be inserted in the card slot.

6.21 Trimming Function

When borderless printing is selected, some portions of the image may not be printed due to aspect ratio differences between the print media type and image data. In the S530D, the “trimming function” has been added, allowing users specify the desired printing area by a frame displayed on the screen.

6.21.1. Conditions for enabling the trimming function

Mode selection:

The trimming function is available only in borderless printing of the Memory Card Photo Direct Printing and in one of the following modes:

- Print All (all frames printing)
- Print One (single frame printing)
- Print Selected (specified frame printing)

Media type and layout selections:

With the above mode selection, the trimming function is available with the following media type and layout selections:

Japanese model:

Media Type	Borderless	1 Photo	2 Photos	4 Photos	8 Photos	16 Photos
A. Photo Paper Pro L Size	O	-	-	-	-	-
B. Photo Paper Pro 2L Size	O	-	-	-	-	-
C. Photo Paper Pro Post Card	O	-	-	-	-	-
D. Photo Paper Pro A4	O	-	-	-	-	-
E. Photo Paper Pro Perforated	-	-	O	-	-	-
F. Photo Paper Plus L Size	O	-	-	-	-	-
G. Matt Photo Paper L Size	O	-	-	-	-	-
H. Plain Paper	O	-	-	-	-	-

Overseas model:

Media Type	Borderless	1 Photo	2 Photos	4 Photos	8 Photos	16 Photos
A. Photo Paper Pro 4” x 6”	O	-	-	-	-	-
B. Photo Paper Plus 4” x 6”	O	-	-	-	-	-
C. Photo Paper Pro Perforated 4” x 6”	-	O	-	-	-	-
D. Photo Paper Pro Letter	O	-	-	-	-	-
E. Photo Paper Pro A4	O	-	-	-	-	-
F. Plain Paper Letter	O	-	-	-	-	-
G. Plain Paper A4	O	-	-	-	-	-

6.

6.21.2. Operation panel buttons and display in the trimming mode

Button operations:

POWER button:	Soft-power-off
Reset button:	Resets the printer (same as the S520)
Mode button:	Invalid
Print button:	Invalid
Cancel button:	Invalid
Maintenance button:	Exits from the trimming mode
Cursor buttons (left and right):	Selects photos
Cursor buttons (up and down):	Moves the trimming frame

LED’s:

Mode LED:	User-selected mode is lit.
Print button LED:	Turned off.

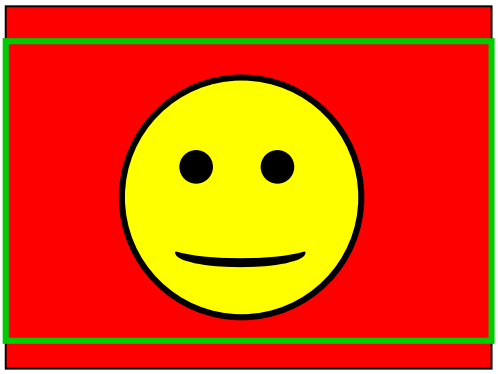
Operation panel:

First/-Order-:	In the Print All mode, the photo number to be trimmed is displayed.
	In the Print One mode, the photo number to be trimmed is displayed.
	In the Print Selected mode, the selected photo number is displayed.
Last:	In the Print All mode, the last photo number is displayed.
	In the Print One mode, display is turned off.
	In the Print Selected mode, the photo number to be trimmed is displayed.
Media Type:	Turned off.
Layout:	Turned off.
Quality:	Turned off.
Print Date:	Turned off.
Optimize Image:	Turned off.
Required Sheets:	The number of sheets required for printing is displayed.
Cursor mark in front of each item:	Turned off.

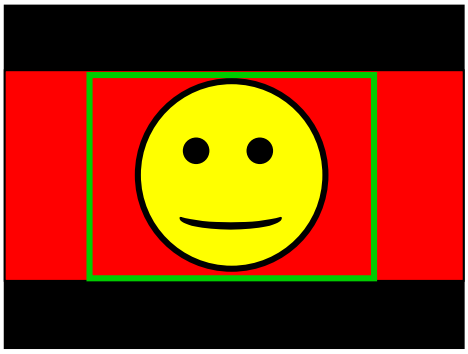
6.21.3. Trimming box

A green trimming box (as a print area) is displayed in Display 2. The box size and movable directions are determined by the aspect ratio of the selected print media and the image. The initial trimming box is positioned at the center of the image frame.

<For a 4:3 JPEG image>



<For JPEG images other than 4:3>



6.21.4. Trimming box positioning

Once the trimming box is set, position of it for that frame is maintained. For a new frame, the trimming box is positioned at the center of the frame.

In the Print Selected mode, if the same photo is selected for 2 or more frames, separate trimming boxes positions can be set for each frame. In the Print Selected mode, the trimming box is displayed only when a photo is selected.

6.21.5. Determination of the trimming box

The trimming box is set to the selected position by either of the following operations:

- Change to a different photo number by pressing the left or right Cursor button.
- Exit from the Trimming mode by pressing the Maintenance button.

6.21.6. Exit from the trimming mode

Pressing the Maintenance button in the trimming mode exits from it, and enters in the Normal mode.